

NORTHWOODS JOURNAL — DECEMBER 2022

A Free Publication about Enjoying and Protecting Marinette County's Outdoor Life

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FLOW to Expand into Marinette County in 2023

<https://lumberjackrcd.org/flow-ais-program>



In November, Lumberjack Resource Conservation & Development Council announced the expansion of their FLOW AIS (Aquatic Invasive Species) program to Marinette County. After two successful years of serving Forest, Langlade and Oconto Counties as part of the Wisconsin Lake Monitoring & Protection Network (LMPN), FLOW AIS will add Marinette County to its coverage area in January 2023.

FLOW AIS coordinates and promotes the Citizen's Lake Monitoring Network (CLMN), Clean Boats, Clean Waters (CBCW), AIS Snapshot Day, Landing Blitz, Drain Campaign, Purple Loosestrife Biocontrol, and other DNR initiatives through the Lake Monitoring & Protection Network. FLOW will work closely with lake associations and the Marinette County Land & Water Conservation Department.

FLOW AIS Coordinator Derek Thorn (below) is eager to start working with Marinette County. It is important to Thorn to continue to prevent the spread of aquatic invasive species. He explained, "I was happy to have the opportunity to make a difference in the world of aquatic invasive species by becoming the FLOW AIS Coordinator in 2021. Now I'm looking forward to the new possibilities the program will have with the addition of Marinette County in 2023."



The FLOW position is made possible through the WDNR Surface Water Grant Program. Each county in Wisconsin receives a WDNR allocation to put toward AIS programming & prevention. Lumberjack RC&D Council, acting as the agent for Forest, Langlade, Oconto, and Marinette Counties, will administer WDNR AIS

programming. Tracy Beckman, Executive Director for Lumberjack stated, "The FLOW program only works if there is continuity and stability at the coordinator position. Add in a passionate and dedicated coordinator like Derek and it's a recipe for success. The addition of Marinette County will ensure the position is funded at the level needed to create that stability and Derek's enthusiasm and passion will ensure its success now and into the future. It's a win, win for conservation!"

FLOW AIS is located out of Lumberjack RCD's main office in Rhinelander Wisconsin. To reach Derek Thorn the FLOW AIS Coordinator, call 715.490.3325 or email him at FlowAIS@LumberjackRCD.Org.

NOW is the Time to Test Your Well Water

Why? *Because if contamination is found, there is funding available to treat the well or to close the old well and construct a new well.* The funding covers 100% of the cost (up to \$16,000). Be sure to apply for the grant before having any work done on your well. The Wisconsin DNR currently has an *ARPA Well Compensation Grant Program* that is helping private well owners and businesses (restaurants, churches, gas stations, etc.) that have contaminated water.



The DNR's website has details of eligibility, how to apply, and who to contact at the DNR: <https://dnr.wisconsin.gov/aid/WellCompensation.html>

Or contact Grant Manager, Sandy Chancellor: 608-720-0122 or email Sandra.Chancellor@wisconsin.gov with questions.

- You may qualify if your household income is \$100,000 or less.
- You must have 2 well water tests from a certified lab showing contamination above the state's maximum allowable levels:
 - Nitrates (greater than or equal to 10 parts per million)
 - Arsenic (greater than or equal to 10 parts per billion)
 - Petroleum
 - Bacteria (E. coli) (any presence)-may need to address contamination by chlorination
 - Metals, pesticides, volatile organic compounds
 - Chemicals

Continued next page

the partridge
flew away, and
I ate all of the
pears.



a partridge in a pear tree

Non-Farming Landowners - Working Together to Improve the Soil on Your Fields

By Sheri Denowski, Marinette County Conservationist



If you own cropland and rent it to a nearby farmer, consider that it is important to understand how to preserve and improve your investment in the land. Your return on investment is directly linked to the profitability of the crops.

The farmer renting your land may already be aware of how to build soil health for productivity and long-term regeneration instead of depletion. Why not have a conversation about the benefits for both of you? The United States Department of Agriculture (USDA) notes 5 main questions for landowners who rent out their fields to discuss with their farmers:

- 1) How does your management system build organic matter in the soil? Organic matter is the foundation of healthy and productive soils which leads to healthy plants, animals, and humans. Fields benefit from practices that increase organic matter over the long term.
- 2) Is the soil tested regularly? Lab test results help a farmer to understand trends in soil fertility which can aid in decision-making regarding the amount of inputs (chemicals, manure) needed for crops.

There are also some basic tests you can do to learn about the health of your soils. **The Marinette County Land & Water Conservation Division has a couple of kits to assist in evaluating your soils.**

These kits include a compaction probe (is your soil so compacted that roots will have a difficult time penetrating downward?), infiltration rings (how quickly can water soak in?), Slake test (does your soil hold together?), & square foot (how many plants or earthworms are seen in one square foot?). Contact Brody.Devine@marinettecountywi.gov or Sheri.Denowski@marinettecountywi.gov for assistance in using the kits.



- 3) Do you use no till or reduced tillage practices? Sometimes people think a bare, tilled field looks nice and tidy as we head into winter, but it is really a sign of lifelessness, lost protection from erosion, and decreased water infiltration.
- 4) Do you plant cover crops? These green plants keep a live root in the ground that will protect the land by holding soil in place, will collect solar energy and power

photosynthesis which feeds microorganisms in the soil, improve water infiltration and water holding capacity, suppress weeds, reduce compaction, and hold nutrients for the next crop. AND they build organic matter (the foundation for health - refer back to #1!).



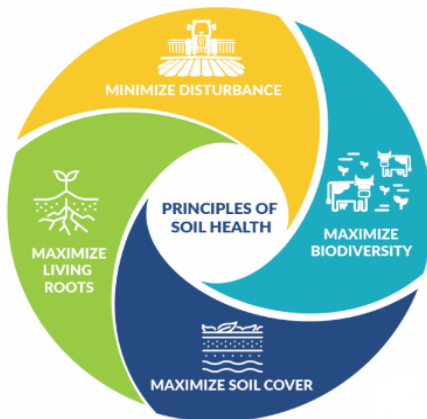
Above: tilled field=no protection, reduced health;
below: cover crops=protection from erosion, build organic matter



- 5) What can we do together to improve the land? Building soil health can take many years, so a long-term lease (3-5 years+) gives the renter assurance that he or she will reap the rewards of the extra efforts to build soil health. As a landowner, are you willing to reduce your rental rate based on efforts to improve the soil? For example, if installing a grassed waterway will help keep your topsoil on your field, will you collaborate with the renter to cover the cost of construction? Or will you reduce your rental rate in order to help pay for the cost of cover crop seeds? These practices benefit both you and your renter and are an investment in the land.

NOTE: Soil health practices benefit gardens too!

We all depend on healthy soils! There are many resources on the internet, and there are many farms working to improve soil health and experimenting with soil health practices. Start a discussion with a farmer you know and learn about the possibilities.



Marinette, Oconto, and Shawano Counties along with USDA-NRCS are working to promote and fund soil health practices and have joined together to create a demonstration farm network (Green Bay West Shore Demonstration Farms) where these practices are showcased and discussed among farmers, agronomists, government agencies, and anyone with an

Wells, continued

- PFAS (greater than or equal to 70 parts per trillion)-not included in usual homeowner's water test (different test bottle, different lab)



If you are in Marinette County, we have water test bottles available at our Land Information Department (2nd floor, 1925 Ella Ct, Marinette, WI 54143; 715-732-7780) for nitrates tests.

Please stop in and pick one up. You take the sample and send it to the lab. We can assist you by explaining the process and reviewing results with you. To test for other contaminants, please check with a certified lab:

- <https://dnr.wisconsin.gov/topic/labCert/certified-lab-lists>

In NE Wisconsin, we often send samples here:

- UWSP Water and Environmental Analysis Lab in Stevens Point, 715-346-3209
- Northern Lake Service, Inc. in Crandon, 715-478-2777 (for PFAS tests)
- Water test costs may also be reimbursed through this program.
- You must fill out the DNR application and receive notice from the DNR that you will receive the funds before you start any work in closing an old well and drilling a new one.
- You will need a cost estimate for the work from a certified well driller: <https://dnr.wisconsin.gov/topic/Wells/contacts.html>

For more general well information, visit the DNR at <https://dnr.wisconsin.gov/topic/Wells>.



Image from <https://wilderness-society.org/healthy-soil-good-for-you-and-for-the-planet/>

interest in soils and plants. Be sure to watch for field events you can attend, check out our website and Facebook page, and contact us if you would like to get connected and learn about soil health practices.

- <https://www.marinettecounty.com/departments/land-information/land-water-conservation/>
- <https://www.facebook.com/people/Marinette-County-Land-Water-Conservation/100075727761451/>
- <http://gbwsdemo.info> - Green Bay West Shore Demonstration Farm Network



Participate in Citizen Science Projects this Winter for Conservation and Wildlife

<https://dnr.wisconsin.gov/topic/WildlifeHabitat/citizenMonitoring>



Volunteers are an integral part of the Wisconsin Department of Natural Resources' approach to monitoring hundreds of species and habitats in forests, grasslands, wetlands, lakes, rivers and streams throughout the state. This public involvement, called **citizen-based monitoring**, leads to high quality scientific data, offers rewarding and educational outdoor opportunities for volunteers and promotes information sharing and collaborations between members of the public and the DNR. Working together, we can better inform natural resource management and conservation.

Citizen-based monitoring projects are active in every county in the state, with volunteer opportunities available for everyone, regardless of initial skill level, science or nature experience or time availability. No matter who you are or where you are in Wisconsin, you can contribute to the management of our precious aquatic and terrestrial natural resources.



Citizen scientists during the annual Christmas Bird Count

The Wisconsin DNR is a proud partner in the **Wisconsin Citizen-based Monitoring Network**, a collaboration of monitoring projects and organizations. The network offers communications, resources and recognition to improve the effectiveness of monitoring efforts throughout the state. To learn more about the Wisconsin Citizen-based Monitoring Network, its partners and the resources it offers, visit the [Citizen-based Monitoring Network website](#).



The Wisconsin Citizen-based Monitoring Network was formed in 2004, but our state's tradition of volunteers partnering with professionals to study our natural resources started long before then and has continued to expand over the last 18 years.



Tracking carnivores in winter

Check out the links below for specific projects you can participate in!

DNR and partner projects

- **Animals**
 - [Wisconsin Bird Monitoring](#)
 - [Wisconsin Breeding Bird Atlas II](#)
 - [Wisconsin eBird Portal](#)
 - [Wisconsin Frog and Toad Survey](#)
 - [Wisconsin Turtle Conservation Program](#)
 - [Deer hunter wildlife survey](#)
 - [Operation Deer Watch](#)
 - [Snapshot Wisconsin](#)
 - [Southwest Wisconsin Deer and Predator Study](#)
 - [Volunteer carnivore tracking](#)
 - [Wisconsin Bat Monitoring Program](#)
 - [Wisconsin Odonata Survey \(dragonflies and damselflies\)](#)
 - [Wisconsin Mussel Monitoring Program](#)
 - [Wisconsin Bumble Bee Brigade](#)
 - [Karner Blue Volunteer Monitoring Program](#)
- **Plants**
 - [Wisconsin Rare Plant Monitoring Program](#)
- **Water**
 - [Citizen Lake Monitoring Network](#)
 - [Water Action Volunteers - citizen stream monitoring](#)
- **Invasive species**
 - [Clean Boats, Clean Waters](#)
 - [Wisconsin First Detector Network](#)
 - [Invasive plant surveys, reporting and monitoring](#)

Here are a few other sites to visit for citizen science opportunities:

- ✓ <https://www.inaturalist.org/>
- ✓ <https://journeynorth.org/>
- ✓ <https://www.experientiallearningdepot.com/experiential-learning-blog/20-citizen-science-projects-for-students-of-all-ages>
- ✓ <https://www.zooniverse.org/>
- ✓ <https://astronomy.com/news/2020/11/explore-outer-space-at-home-with-these-6-citizen-science-projects>
- ✓ <https://skyandtelescope.org/get-involved/citizen-science-collaboration/>

Upcoming Events for Citizen Scientists!

In addition to some of the projects listed at left for winter citizen science, check out these other opportunities to contribute your observations for conservation and science!



1. Audubon's 123rd Christmas Bird Count will be held from Dec 14, 2022 to January 5, 2023! Frank Chapman and 26 other conservationists initiated the Christmas Bird Count (CBC) as a way of promoting conservation by counting, rather than hunting, birds on Christmas Day of 1900. Some counts have been running every year since then and the CBC now happens in over 20 countries in the western hemisphere! Visit the site below for more information, how to sign up, and participate:

<https://www.audubon.org/answers-your-top-questions-about-christmas-bird-count>

* Another birding event occurs in February, the Great Backyard Bird Count – visit <https://www.birdcount.org/> for more information.

2. Project FeederWatch turns your love of feeding birds into scientific discoveries. FeederWatch is a November-April survey of birds that visit backyards, nature centers, community areas, and other locales in North America. You don't even need a feeder! All you need is an area with plantings, habitat, water, or food that attracts birds. *The schedule is completely flexible.* Count your birds for as long as you like on days of your choosing, then enter your counts online. Your counts allow you to track what is happening to birds around your home and to contribute to a continental data-set of bird distribution and abundance. Visit <https://feederwatch.org/> to sign up!



Northwoods Journal Online

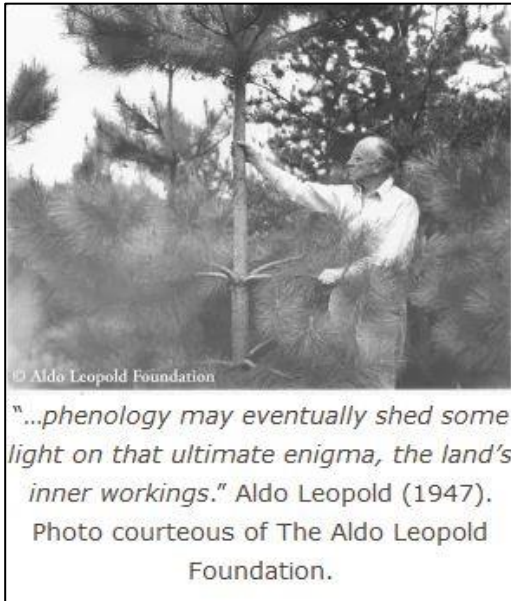
Want to read issues of the *Northwoods Journal* online? Go to www.marinettecountywi.gov and search for 'Northwoods Journal'. We can also send you an e-mail reminder when each new issue is posted online, or you can get a copy mailed to you. Contact Anne Bartels, Information & Education Specialist at 715-732-7784 or email anne.bartels@marinettecountywi.gov.



The Ecology of Phenology

<https://mywisconsinwoods.org/2018/12/12/the-ecology-of-phenology/>

Phenology is the study of the timing of seasonal events in nature. For Aldo Leopold, keeping phenological records was a way to maintain an intimate connection with nature and gain a sense of place. To the curious naturalist, these phenological records are also indicators that help us understand the inner workings of the land.



Ever wonder how plants and animals can time with considerable accuracy when different seasonal events will take place each year? The general answer is that for each plant or animal the critical annual event—be it blooming, migrating, hibernating, or some other key life cycle event—occurs when it has the best chance leading to success at each of life's three major goals: growing, surviving and reproducing. In each instance there is something happening in the organism's environment that ultimately determines their success or failure at life's goals.



We call those environmental conditions the **ultimate factors** that determine when a seasonal event should ideally and on average occur each year. Common ultimate factors include food availability, temperature and rainfall. Natural selection strongly favors organisms that engage in critical seasonal activities at the optimal time.

But, reacting appropriately to seasonal changes in ultimate factors requires a mechanism for telling seasonal time in order to anticipate and prepare for the arrival of an ultimate factor. Unlike us, plants and animals don't have access to printed calendars to help them know ahead of time that it's time to begin preparing for a key life cycle event. Instead, they rely on other environmental clues that give them a sense of seasonal time.



These environmental clues of an upcoming change in an ultimate factor are called **proximate factors**. They don't directly affect growth, survival and reproduction per se, but they give a plant or animal an essential sense of seasonal time and allow them to be in sync with ultimate factors.

So, for example, many birds migrate to their breeding grounds and initiate nesting activities at the precise times that eventually allow their young to have access to a future peak in seasonal food availability. Thus, parents ensure that their offspring can grow rapidly and that their own reproductive effort will be successful. In this case, food availability is the ultimate factor.

But, how does a migratory bird that might have spent the winter hundreds or thousands of miles from the breeding ground, "know" when to begin migration, courtship, territory establishment, nest building and egg laying long before the seasonal flush of food? They use **photoperiod**, or day length, as a proximate factor. As the photoperiod changes, birds respond through physiological processes that stimulate seasonal activities at just the right time. Photoperiod is a great proximate factor to use as a clue because it doesn't vary between years and because many plants and animals have physiological mechanisms for monitoring and responding to it.



Many different environmental factors determine when a particular phenological event occurs. Some are proximate factors while others are ultimate factors. **Ecology** is the study of how organisms interact with one another and with their environment. So, phenology, the study of the timing of seasonal events, reveals one important way that plants and animals relate to their surroundings to ensure that they succeed at achieving their basic life goals.

The Aldo Leopold Foundation offers an annual Phenology calendar. It contains beautiful nature photography and shares average observation dates for many natural phenomena. The calendar is rooted in the Leopold family's passion for the study of [phenology](https://mywisconsinwoods.org/2018/12/12/the-ecology-of-phenology/), and features monthly narratives explaining iconic phenological events. Curated by Aldo Leopold Foundation Senior Fellow Stan Temple, the sidebars help explain the seasonal events happening in your backyard and the calendar offers reminders for what you might expect to observe nearly every day of the year. For more information about the calendar and the Aldo Leopold Foundation, visit <https://www.aldoleopold.org/>.



DNR Announces Reopening of Peshtigo Shooting Range

<https://dnr.wisconsin.gov/newsroom/release/64301>



The Wisconsin Department of Natural Resources has announced extended hours at the Peshtigo Shooting Range in Marinette County.

Due to increased volunteer hours, the shooting range will now be open four days a week, with more hours on Sunday. Previously, the range was only open for two days per week.

The new hours are:

- Monday, Wednesday, Thursday and Friday: **1 p.m. – sunset**
- Sunday: **9 a.m. – 2 p.m.**
- Tuesday and Saturday: **Closed**

"The facility is here for the community, and the dedication of our volunteers is emblematic of that," said Bob Nack, DNR Recruitment, Retention and Reactivation Team supervisor. "The DNR's goal is to provide safe and enjoyable experiences for the users and the facility neighbors."

Visitors should be aware that range hours can change in the winter due to the weather. If the gate is closed, the range is not open.

To check for updates on all shooting ranges and their open status, visit the DNR's [Public Shooting Range Locations webpage](https://dnr.wisconsin.gov/shooting-ranges).

For those interested in volunteering at the Peshtigo Shooting Range, contact Bob Nack at Robert.Nack@wisconsin.gov or 608-617-3492.

SALT SMART. SAVE MORE.

Five tips for salting smart this winter:



1. Shovel first. Clear all snow from driveway and sidewalks before it turns to ice. Salt should only be used after the snow is removed and only in areas needed for safety.



2. Size up. More salt does not mean more melting. A 12-ounce coffee mug of salt should be enough for a 20-ft driveway or about 10 sidewalk squares.



3. Spread. Distribute salt evenly, not in clumps.



4. Sweep. If you see leftover salt on the ground after the ice melts, then you've used too much! Sweep up leftover salt to keep it out of our rivers and streams.



5. Switch. Rock salt stops working if the temperature is below 15 degrees. When temperatures drop that low, switch to sand for traction or choose a different deicer formulated for colder temperatures.



Flag Up - Ice Fishing in Wisconsin!

<https://dnr.wisconsin.gov/topic/Fishing/icefishing> & <https://fishingbooker.com/blog/ice-fishing-in-wisconsin/>



When the snow flies and the wind howls, we know where to find Wisconsin anglers - on the ice! Have a fun and safe season!

Ice fishing tips from seasoned veterans

Fisheries biologists Kurt Welke, Skip Sommerfeldt and Terry Margenau give helpful tips on fishing for panfish, walleye and northern pike:

- [Fishing for bluegill and panfish through the ice \[PDF\]](#)
- [Fishing walleye through the ice \[PDF\]](#)
- [Fishing northern pike through the ice \[PDF\]](#)

Ice Fishing Techniques

In Wisconsin, bluegill, perch, walleye and northern pike are the most sought after species in winter. Bluegill and perch are the most commonly caught.

Minnows are preferred bait for many of the fish listed below. When fishing minnows, remember there are restrictions designed to [prevent the spread of VHS](#).

Bluegill



Try fishing in shallow bays where the water is about four to eight feet deep. For bait, try a teardrop lure tipped with live insect larvae. Gently jig the lure up and down.

Yellow perch



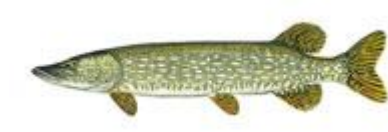
Jig for perch at 35 feet. For bait, try small, live minnows or weighted ice flies and insect larvae. (Minnows are illegal on some lakes -- check the [fishing regulations](#) for a summary of Wisconsin fishing laws and fishing regulations.)

Walleye



This schooling fish is found along the shorelines and in shallow bays. As with northern pike, tip-ups rigged with minnows are the best technique. (Minnows are illegal on some lakes -- check the [fishing regulations](#) for a summary of Wisconsin fishing laws and fishing regulations.)

Northern Pike



Fish shallow bays with large live minnows on a tip-up in four to 12 feet of water. (Minnows

are illegal on some lakes -- check the [fishing regulations](#) for a summary of Wisconsin fishing laws and fishing regulations.)



Equipment and Tools

Ice fishing in Wisconsin is similar to ice fishing anywhere else - you need the right equipment for the fish you're targeting. However, you may also need some tools to make your ice fishing adventure as comfortable as possible.

Here's a list of the most common tools you may need:

- **Auger.** This tool is designed for drilling a fishing hole in the ice.
- **Chisel.** This is also called a spud, and you'll use it for chopping holes on thinner ice.
- **Portable seat.** Some anglers sit on buckets, while others bring along a small folding chair or stool.
- **Skimmer.** This is a handy tool that helps you scoop out chips from a drilled fishing hole.
- **Sled.** Also known as a toboggan, this tool helps you transport your gear on ice.
- **Tip-up.** This device lets you know when a fish takes the bait by raising a signal flag.



Ice Shanties

If you've ever been to a lake in Wisconsin during the winter season, you've probably seen ice shanties. Those are shelters designed to keep you out of the blowing wind and snow. You'll find shanties made of different materials, from plastic and canvas to wood. Some anglers in Wisconsin carry portable shanties in case the weather turns bad.

Inside, you may find a bench for you to sit on and just enough room to stand. Some anglers prefer to use heaters in their shanties for extra warmth, while others put small burners outside. Don't worry, they shouldn't actually heat the ice -- they're designed to just warm your hands. However, it's important to always be cautious while using heaters and burners.



Register today for Michigan Water and Wastewater Professionals Week webinars!

<https://www.michigan.gov/egle/outreach/water-and-wastewater-professionals-workforce-week>



Water is one of our most valuable resources in Michigan (and the Great Lakes region) and necessary to sustain life. Governor Gretchen Whitmer officially designated the week of **December 12-18, 2022**, as Water and Wastewater Professional Workforce Week to recognize the important role these critical water professionals have played in keeping the water running through our pipes each day.

Visit the website above to register and for full descriptions of each session.

December 12, 1:00 - 2:00 PM
[Drinking water sampling procedures & sampling plans: Getting it correct the first time!](#)

December 13, 10:00 - 11:00 AM
[MiEHDWIS Training for Drinking Water Operators](#)

December 14, 10:00 - 11:00 AM
[Panel discussion: Bringing the "future" water workforce into your community](#)

December 15, 10:00 - 11:00 AM
[Increasing resiliency: Cybersecurity best practices](#)

#MiWaterProsWeek
[Michigan.gov/EGLEvents](https://michigan.gov/EGLEvents)

Program questions:

Koren Carpenter for drinking water:
CarpenterK5@Michigan.gov

Alyssa Sarver for wastewater:
SarverA@Michigan.gov

Registration questions:

Alana Berthold: BertholdA@Michigan.gov
Joel Roseberry: RoseberryJ@Michigan.gov



9 Indoor Winter Activities for Kids

<https://www.thespruce.com/kids-indoor-winter-activities-2104658>



When it's cold out and the kids are excited for the chance to get out and romp in the snow, but the conditions are just too blustery, treat them to some indoor winter games. From building an indoor snowman to whipping up some delicious hot cocoa, these ideas for indoor winter activities celebrate the cold and snowy weather inside the comfort of your home.

Make Snowman Snacks

Gather the kids in the kitchen, and warm up your oven, to bake a batch of snowman cookies or cupcakes. If you don't want to bake, you can make snowman ice cream sundaes, sledding snowman graham cracker treats, or any other snowman party food ideas.



Indoor Snowball Fight

There's something about a fresh snowfall that really revs up your kids' energy levels. Help them work out some of that excitement with a little practice session for the snowball fight they'll have later. Roll up balls of paper, white socks, or make your own fabric snowballs. Give each kid a bucket of these indoor snowballs and let them toss them at each other for fun.

Winter Hot Cocoa Picnic

After the indoor snowball fight, the kids will want to warm up with some hot cocoa. Throw a white blanket on the floor and sprinkle it with cotton balls. Place it near your fireplace or build a faux fire and place it in the middle. Whip up a pot of hot cocoa, serve it with cookies or marshmallows, and let the kids gather for a warm winter picnic.



Homemade Winter Cottage

If you have a large cardboard box and a few craft supplies, then you have the materials needed to help the kids build their own winter cottage. Cut the window and door holes out of the box and then let them decorate it with paint, glue, markers, ornaments, and, of course, fake snow for the roof. Don't forget to top it with a chimney! (You can make one out of the leftover cardboard from the door or window.)

Build a Snowman

Think you need real snow and the outdoors to build a snowman? Think again. Stuff a

bunch of large white pillowcases (with pillow stuffing, comfy clothes, or even crumpled up paper) and you have the makings for an indoor snowman. Velcro can help to stack them as well as be used for affixing items such as buttons for eyes, nose, and mouth.

Winter Bingo Game

Make your own bingo sheets using winter-themed clipart. Print an extra sheet to cut out the clipart images and place them in a bowl. Use these to call the game of Bingo. Snow-cap style candies or mini marshmallows make fun, edible, winter-themed bingo card markers.



Winter Piñatas

Who says piñatas are only for birthday parties? A snow day sure feels like a holiday to kids, celebrate with this exciting game! You can make your own with supplies you probably have around the house, including a simple, paper bag. Fill it with treats. Clear a space inside where you can safely hang it and let the kids whack away until it spills out its goodies.

Winter Party Games

Party games are a great way to pass the time on a snow day. Choose a few games with a winter theme, such as [snowman games](#), penguin games, or even [reindeer games](#), during the holiday season.

Winter-Themed Kids' Movies

When it's cold outside, one of the best ways to keep warm and entertained is to snuggle up under the blankets and watch a winter-themed movie. Some suggestions for kids' movies with a winter theme:

- "Snow Buddies"
- "Eight Below"
- "Snow Dogs"
- "Happy Feet"
- "Mr. Popper's Penguins"



USDA Requests Public Input on Implementation of Inflation Reduction Act Funding

<https://www.nrcs.usda.gov/news/usda-requests-public-input-on-implementation-of-inflation-reduction-act-funding>



Natural Resources Conservation Service

USDA's Natural Resources Conservation Service (NRCS) will use the investments provided through IRA-funded conservation programs to support farmers and ranchers in adopting and expanding climate-smart activities and systems. NRCS asks for comments on how to target program benefits, quantify impact, and improve program delivery and outreach, especially for underserved producers. **Comments are due Dec. 21, 2022.**

The Inflation Reduction Act provided unprecedented funding levels for several of the existing programs that NRCS implements. The increased funding levels begin in fiscal year 2023 and rapidly build over four years, totaling these additional amounts:

- \$8.45 billion – Environmental Quality Incentives Program
- \$3.25 billion – Conservation Stewardship Program
- \$4.95 billion – Regional Conservation Partnership Program
- \$1.4 billion – Agricultural Conservation Easement Program
- \$1 billion – Conservation Technical Assistance

NRCS is asking for public input on to how to best maximize benefits for climate mitigation, including targeting practices and programs that provide quantifiable reductions in greenhouse gas emissions. Input is also requested to help identify strategies and provide recommendations on how to maximize, target, monitor, and quantify improvements to soil carbon, reductions in nitrogen losses, and the reduction, capture, avoidance, or sequestration of carbon dioxide, methane or nitrous oxide emissions associated with agricultural production. NRCS is also seeking ideas for how to further streamline and improve program delivery to increase efficiencies and expand program access for producers, especially underserved producers.

Public comments should be submitted through this [Federal Register notice](#) by Dec. 21, 2022. If you have questions, contact NRCS.IRA.Input@usda.gov.

More Information

On August 16, President Biden signed the [Inflation Reduction Act](#) into law. It is an historic, once-in-a-generation investment and opportunity for the agricultural communities that USDA serves. It will help producers stay on the farm, prevent them from becoming ineligible for future assistance, and promote climate-smart agriculture by increasing access to conservation assistance. In October, USDA took action using Inflation Reduction Act funds to immediately provide relief to qualifying distressed borrowers whose operations are at financial risk while working on making transformational changes to loan servicing.

USDA has already provided nearly \$800 million in assistance to financially distressed borrowers and has outlined steps to administer up to an additional \$500 million in payments. To learn more, visit usda.gov.



DNR Asks Public to Report Black Bear Den Locations

<https://dnr.wisconsin.gov/newsroom/release/64331>



The Wisconsin Department of Natural Resources (DNR) encourages the public to report any black bear den locations they find across Wisconsin in order to help with an ongoing study on black bear reproduction.

[The Black Bear Litter and Diet Survey](#) will begin its second year of data collection this upcoming winter. The study will generate new estimates of black bear reproductive rates within each bear management zone, and these estimates will improve the accuracy of the population models used in each zone. Additionally, researchers are investigating a connection between consumption of human food sources and bear reproduction since diet can affect cub survival rates and litter sizes.



Dr. Jennifer Price Tack carefully holds a black bear cub about to be weighed for the Black Bear Litter and Diet Survey. Masks and gloves are part of the standard health protocol when handling wildlife.

"Public reporting is essential to this project. You don't find bear dens every day, so it is important that people report them to us when they find them," said Dr. Jennifer Price Tack, DNR Large Carnivore and Elk Research Scientist. "Reporting dens helps us meet the sample size requirements for our study and increases the accuracy of the black bear population model." [Price Tack describes the importance of this project and public reporting in this short video.](#) [The public is encouraged to report as much information about known black bear dens as possible](#) without approaching or disturbing the dens. Den locations from prior years can be useful since black bears will occasionally re-use dens.



A Safe, Successful First Season

Surveying efforts began earlier this year, and the bear research team was busy surveying dens all season. They worked with landowners to visit the den before deciding to survey, determining if the den is safe, accessible and in use. They surveyed as far south as Jackson County and as far north as Iron County.

Staff successfully GPS-collared 13 female black bears (called sows). Collars help staff learn more about bear foraging behavior and locate the sows in the following years. Revisiting the sows will help staff determine the reproductive success of each sow, such as her litter frequency, litter size and the survival rates of the cubs. Data on sow weight, body measurements and age were also collected.



While surveying, bear health and safety are a top priority. Designated staff monitor the sow's breathing and heart rate while the rest of the team quickly gather the needed samples and measurements. Any cubs present at the den are carefully weighed and sexed. Cubs are tucked into staff's coats to keep them warm because the cubs cannot yet regulate their own body temperature. Once researchers are finished, the sow and cubs are tucked back into their den. "We completed all surveys without any safety issues. That's huge. We put a lot of work into minimizing the risks to people and bears, and we will continue to make that a priority in coming years," said Price Tack.

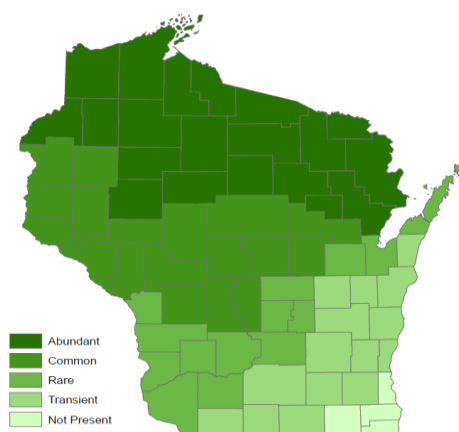
Looking Ahead

The Black Bear Litter and Diet Survey team will continue to survey dens for the next seven to eight years. Over that time, the team hopes to get 100 collars out across each of the [bear management zones](#), with approximately 20 collars per zone. So far, the team is on track for the needed sample size, but they'll need new reports each year to meet their benchmark. [The public can report known black bear dens to the DNR by clicking this link.](#)

Black Bear Population Status and Distribution

Wisconsin's occupied bear range is expanding, which means residents can expect to see black bears in areas outside of the bear's traditional range. An abundant population and suitable bear habitat have facilitated the southerly movement of occupied bear range in Wisconsin. Wisconsin's black bear population is considerably higher than it was 30 years ago. Wisconsin's bear population was estimated to be about 9,000 bears in 1989. The most recent data indicates the bear population is currently estimated to be a little over 24,000 bears. DNR manages bear population size through regulated hunting. The number of hunting permits have steadily increased following studies showing higher numbers of bears.

Black Bear Density



<https://dnr.wisconsin.gov/topic/hunt/bearpop.html>

Some Porcupine Facts

<https://www.facebook.com/nationalparkservice>



Prickly visitor (porcupine) clings to railing outside the visitor center [Katmai National Park & Preserve](#).

How about some fun porcupine facts? Yes? No? Here we go.

- A porcupine, aka 'Needle Beaver', has approximately 30,000 quills on its body. (Not a hugger. We repeat. Not. A. Hugger.)
- Myth busting. **Porcupines cannot throw their quills.** Don't get us wrong, they may throw some sassy barbs, (Porcupines are vocal critters and create a wide array of verbal cues, including shrill screeches, coughs, groans, whines, passive aggressive insults, teeth chatters, and witty barbs.) but alas, no quill launching. However, on occasion, loose quills will fall out before it strikes (awkward), creating the illusion that they're being shot out.
- The most popular porcupine hobby is needlepoint.
- What a slow poke. Porcupines are considered slow, attaining a maximum speed of two miles per hour. (Seems fine to us.)
- Porcupines have a strong odor to warn away predators, which it can increase when agitated. Turn it up!!! The smell has been described as similar to strong human body odor, goats, or some cheeses.
- Baby porcupines are called "porcupettes." And they are adorable.

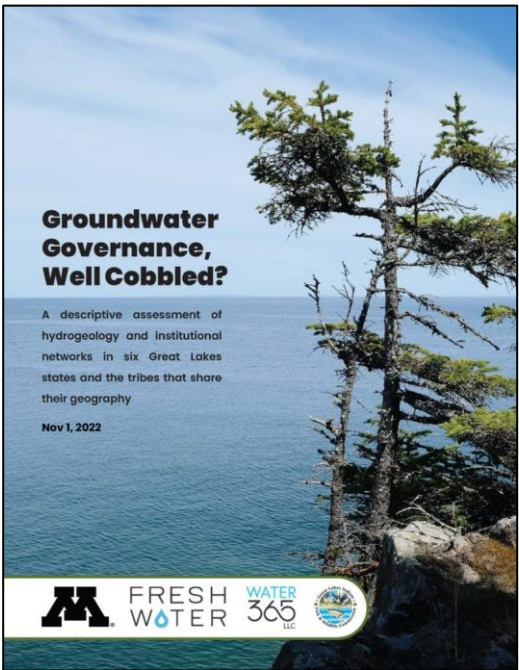


lizclimo@mlr.com



New Report on the Future of Water Security in the Great Lakes

<https://waynedalenews.com/2022/11/the-future-of-water-security-in-the-great-lakes-region/>



A new report led by St. Paul-based Freshwater Society with collaborators at the Humphrey School of Public Affairs at the University of Minnesota, Great Lakes Indian Fish and Wildlife Commission, Water365, and the Bureau of Indian Affairs reveals how groundwater is governed and serves as a reference for water policy and resource professionals to build future policy work.

The authors conclude that the current structures, cobbled together over decades in response to different kinds of stressors and crises, does not adequately provide for a sustainable and equitable groundwater management for the Upper Midwest and Great Lakes regions. This poses a risk to the region’s future water security and prosperity.

Groundwater is a crucially important but often overlooked resource in the Great Lakes region. As what is referred to as a common pool or shared resource, the region’s aquifers should have a well-structured set of governing principles to guide their sustainable and equitable use. The report asks, “But do they?”

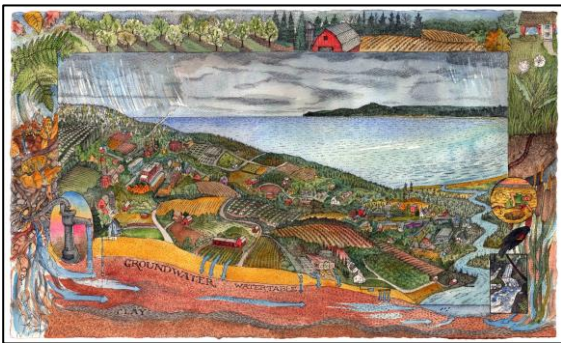


Image from <https://forloveofwater.org/sixth-great-lake/>

The study focused on groundwater across the six Great Lakes states and numerous sovereign tribes in the Environmental Protection Agency’s administrative Region 5: Minnesota, Wisconsin, Michigan, Illinois, Indiana, and Ohio and the 35 federally recognized tribal governments sharing geography.

“Minnesota leads the region in producing technical information about groundwater thanks to mapping and monitoring efforts supported by sustained state funding,” said Dr. Carrie Jennings of the Freshwater Society, one of the lead authors. However, technical knowledge is lacking in many states resulting in limited understanding of where and how much water there is, and how sustainable the current pumping rate is, according to Jennings.

There is little coordination around local, shared aquifers. This is especially problematic where aquifers span political boundaries like the Chicago to Milwaukee corridor or the tri-state Detroit-to-Toledo area.

“Merely ignoring the interdependence on cross-border aquifers doesn’t make it go away. It simply invites the courts to make decisions, which can take a long time,” Jennings noted. Gaps in groundwater management risk prioritizing those with the loudest voices or the most resources and reproducing the marginalization of Native peoples and diverse ecosystems, with little attention to long-term sustainability.

The project team interviewed more than 67 individuals working in the state, federal and tribal governments focused on groundwater management. In preparation for these interviews, the team reviewed regional planning and scientific documents, groundwater-focused statutes, cases, and administrative rules to provide the legal context.

This study was funded by the Chicago-based Joyce Family Foundation, and can be viewed at freshwater.org/reports/white-papers-groundwater-governance/ - you can explore the report in its entirety or by state.

Freshwater is a Minnesota-based nonprofit organization that works to inspire and empower people to value and preserve freshwater. Since 1968 Freshwater has used science to engage communities on how to equitably improve water today and for future generations.

For more about groundwater data, resources, general information, etc., visit:

- <https://dnr.wisconsin.gov/topic/Groundwater> - WDNR Groundwater website
- <https://dnr.wisconsin.gov/topic/Groundwater/GCC/about.html> - WI Groundwater Coordinating Council
- <https://www.wri.wisc.edu/resources/links/wisconsin-groundwater-programs/> - UW Water Resources Institute
- <https://wgnhs.wisc.edu/water-environment/groundwater-monitoring-network/> - UW Geological & Natural History Survey
- <https://wisconsinlandwater.org/members-hub/conservation-resources/groundwater> - WI Land & Water Conservation Association
- <https://waterdata.usgs.gov/wi/nwis/gw> - US Geological Survey
- <https://michigangroundwater.com/> - MI Groundwater Association
- <https://forloveofwater.org/sixth-great-lake/>
- <https://forloveofwater.org/flows-groundwater-awareness-week-matters/>



Meet the Black Capped Chickadee!

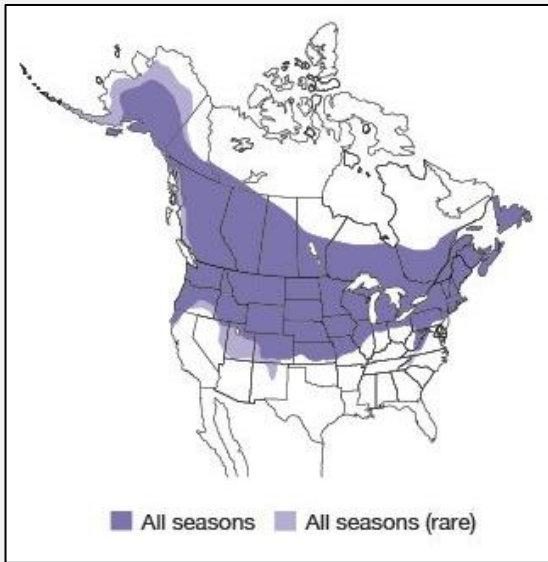
<https://www.birdsandblooms.com/birding/bird-species/songbirds/black-capped-chickadee/>



- **Scientific Name:** *Poecile atricapilla*
- **Family:** [Chickadee](#)
- **Length:** 5-1/4 inches
- **Wingspan:** 8 inches
- **Distinctive Markings:** Black cap and chin, white cheeks and gray back

Male and female black capped chickadees look identical, at least to humans, so behavioral clues are the only ways to distinguish them. It’s mostly males that sing the signature “fee-bee” song. And, in aggressive encounters at bird feeders, males are usually dominant over females. Their diet consists of insects, berries and seeds. Backyard favorites include sunflower seeds, peanuts, suet and nyjer seed.

Listen to the black capped chickadee’s sounds. Their “chick-a-dee-dee-dee” is its recognizable call; the song is a “phoe-bee” tune. Listen here: https://www.allaboutbirds.org/guide/Black-capped_Chickadee/sounds.



Seven chickadee species regularly occur in North America: Carolina, Black-capped (see range map above), Boreal, Mountain, Chestnut-backed, Mexican and Gray-headed Chickadee.



DECEMBER | 2022

OUTDOOR ALMANAC

1

Look for the white, waxy bloom on raspberry and blackberry canes that helps the plants retain water and protects them from dirt and bacteria. This same bloom is also found on a variety of fruits, including plums, grapes, blackberries, and apples.

3

The shape and size of White-tailed Deer scat reflect what they eat. This time of year, the scat has transitioned from larger, moist, clumped pellets from the grasses, fruit, and clover of spring and summer to small, dry, individual pellets from the twigs, nuts, and leaves of winter.

7

Full moon.



9

Most **Great Blue Herons** have migrated, but you can still find a few where the water is not completely frozen. They used to all be gone by January as their access to fish froze over, but with warmer winters, a few of them remain year-round.



10

On cold nights at the beginning of winter, damp or wet areas of the ground can form ice needles.

11

Not true hibernators, **skunks**, opossums, and raccoons may emerge from their shelters every few weeks. Other mammals, including coyotes, foxes, bobcats, fishers, deer, squirrels, rabbits, and porcupines, remain active all winter.



13–14

It's the peak of the Geminid meteor shower, with as many as 120 shooting stars per hour visible in the dark sky from midnight to dawn.

16

You may see Painted and Snapping turtles moving slowly under the ice. While their systems slow down in winter, they still need oxygen, which is more available in the water than in the mud.

17

Black bears may still be out and about until nights are consistently below freezing. If you live in an area with bears, it's best to wait until the full winter cold to put out bird feeders.



18

Most **Asian lady beetles** are hibernating outside, often in clusters of hundreds or even thousands in tree crevices or under bark, but you may find a few overwintering in your home.



19

If food supplies are scarce up north, crossbills, Pine Grosbeaks, Pine Siskins, and redpolls may be around by this time.

21

Today is the winter solstice. It's the shortest day and longest night of the year, and the official start of winter. Even though daylight increases from now until June, our coldest weather is still to come.

25

Look for shiny, leathery, evergreen Christmas ferns in the snowy woods.

28

Keep an eye out for **Giant Silk Moth cocoons** on your winter walks. Cecropia caterpillars spin a gray-brown, spindle-shaped cocoon along the length of a small branch, while Polyphemus cocoons are rounder, less securely attached, and often covered with a leaf.



massaudubon.org

45/52

As we approach winter, birds require high energy foods in the cold weather to maintain their fat stores for keeping warm on frozen nights.

Put out food and water for birds on a regular basis. When the weather is severe, feed them twice daily if possible, in the morning and early afternoon.

Make sure to use good quality wild bird food. Adjust the quantity you put out based on the demand and never leave uneaten food to gather around the feeders.

Once you have established a feeding routine, try to stick to it. Birds will become used to when the food is there and time their visits.

www.naturehood.uk

THIS WEEK FOR WILDLIFE

Naturehood earthwatch

okay guys, you're on speakerphone.

hi
hello!
hey
hi bunny

four calling birds

DIY: Outdoor Holiday Decorations That Double as Delectable Treats for Birds

<https://www.audubon.org/magazine/winter-2020/diy-outdoor-holiday-decorations-double-delectable>



The holidays are often a busy time in the kitchen. Make time to whip up tasty treats for birds, too. These festive goodies will attract an array of avian visitors outside your home.

Suet Wreath

Materials:

- Bundt pan
- Large pot
- Wide ribbon
- 3 blocks rendered suet (available at garden centers)
- 1/2 cup additive-free nut butter
- 9 cups bird seed
- Dried fruits and berries

Steps:

1. Over low heat, melt three blocks of suet in the pot. Stir consistently and do not boil.
2. Once the suet melts, add nut butter and stir until fully melted. Remove from heat.
3. Add the bird seed to the melted suet.
4. Spray the bundt pan with cooking spray, sprinkle the bottom with berries and fruit, and fill with liquid suet.
5. Refrigerate overnight to harden, and then remove the mold from the pan.
6. Tie a ribbon around the wreath and hang outside three feet or less from a window to prevent deadly post-meal collisions.

Bird-seed Ornaments

Materials:

- 2 cups birdseed, such as Audubon's cherry wild mix
- 1 tablespoon unflavored gelatin
- 2 tablespoons cold water
- 1/3 cup boiling water
- 12 cookie cutters
- Needle
- Thread

Steps:

1. Combine gelatin and cold water and let sit one minute.
2. Add boiling water and stir until the gelatin is dissolved.
3. Add birdseed and stir the mixture thoroughly to combine.
4. Fill cookie cutters with the seed mixture; press firmly to fill the mold completely. Refrigerate overnight.



5. Let ornaments come to room temperature and gently remove from molds.
6. Use a needle to pull the thread through the ornament, at least a half-inch from the edge, and tie knot.
7. Hang the ornaments from tree branches or your fire escape (if allowed).



Scrumptious Garland

Tinsel is just the ticket for sprucing up your indoor Christmas tree, and you can make some colorful, scrumptious trim for your outdoor trees, too. Combine some, or all, of the ingredients listed below to create long strands of garland that birds will devour. *Note: A single, long strand of garland loaded with goodies can be unwieldy. We suggest creating several three- or four-foot-long sections and then tying them together as you hang them.*

Materials:

- Air-popped popcorn (unsalted and unbuttered, and preferably stale)
- Whole peanuts in the shell (unsalted, preferably raw)
- Cranberries (dried or fresh)
- Apple slices (dried)
- Orange slices (fresh)
- Thread
- Needle

Steps:

1. Unspool a 4-foot-long section of thread; tie a knot or two a couple of inches from one end, and thread and secure a needle at the other.
2. Thread the ingredients one at a time. Consider starting with an orange or apple slice to provide a secure anchor to build upon, and create your own alternating pattern of ingredients.
3. When only a few inches of thread remain, tie a double knot close to the final item.
4. Repeat steps 1-3 to obtain desired length.
5. Starting at the top of the tree, drape the garland on the branches in a downward spiral, tying on new strands as you go.



For more ideas on DIY bird feeding projects, visit:

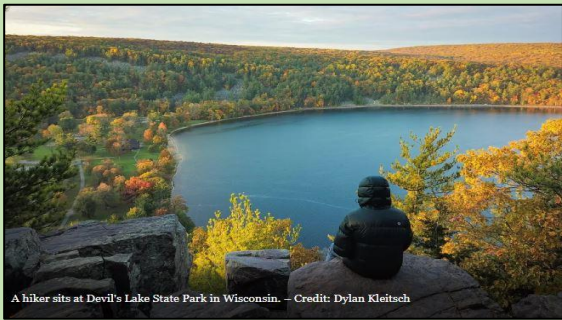
- <https://inhabitat.com/diy-suet-winter-birdfeeders/>
- <https://www.firefliesandmudpies.com/diy-winter-birdfeeders/>
- <https://www.natureswaybirds.com/blogs/news/10-diy-winter-birding-ideas>

2023 State Park & Forest Admission Stickers and Trail Passes Now Available

<https://dnr.wisconsin.gov/topic/parks/admission> & <https://dnr.wisconsin.gov/topic/parks/admission/trailpass>



2023 Wisconsin state park and forest admission passes are now on sale, giving you access to more than 60 state parks, forests and recreation areas across Wisconsin. **Beginning Friday, Nov. 25, annual admission stickers for 2023 will be available for purchase and are valid from the date of purchase through Dec. 31, 2023!**



Stickers and passes make a great holiday gift for any outdoors lover. We recommend purchasing stickers by Friday, Dec. 10 to receive them before the holidays.

Resident and non-resident annual admission stickers can be purchased online or at individual properties via drive-up window service, electronic sales kiosks or self-registration stations. State trail passes are available only at individual properties.



[Learn more about the Wisconsin state park and forest vehicle admission sticker.](#)



Holiday Energy-saving Tips

<https://www.wisconsinpublicservice.com/savings/tips/holiday>



Can you be festive and frugal?

Absolutely, especially with these holiday energy-saving tips.

Lighting tips

- Replace your old holiday lights with Light-Emitting Diode (LED) light strings. Although they cost more initially, LEDs use a fraction of the energy of traditional holiday lights. Plus, they last up to 20 years.
- Plug your indoor and outdoor lighting displays into a timer set to run during the earlier evening hours.
- If you don't use timers, unplug your lights when you go to sleep or leave home.
- Rather than adding more lights to your tree, try enhancing the existing lighting with tinsel, mirrored ornaments and other reflective items.
- Try floodlights on the outside of your home. Models are available for incandescent and halogen bulbs. Halogen bulbs give more intense light and use less energy. Buy different colors for a festive look!
- Use our [holiday lighting calculator](#) to estimate the energy costs of your holiday lights.

Entertaining tips

- Cook as many dishes as possible in your microwave over the holidays. Because microwaves cook food so quickly, the typical model uses as much as 75 percent less energy than a conventional oven.
 - Use your slow cooker. For about 17 cents worth of electricity, you can prepare an entire meal.
- 
- When using your oven, check cooking progress by looking through the window. Opening the oven door for even a few seconds lowers the temperature inside by as much as 25°F.
 - If your stove doesn't have a window, try not to open the door to check your food until it's as close to the expected finish time as possible.
 - Turn off your oven several minutes before your food is fully cooked. As long as the door remains closed, enough heat will be stored inside to finish cooking your meal.
 - If you use glass or ceramic pans, try turning your oven temperature down 25°F. Your dish may cook just as quickly.



- When cooking on your stove top, match the size of the pan to the heating element. More heat will get to the pan and less will be lost.
- Keep your refrigerator and freezer well stocked. A full refrigerator or freezer saves energy by reducing the recovery time when the door is opened.

Heating tips

- Set your thermostat between 66°F and 68°F, a comfortable range for most people. For every 1°F you lower your thermostat, you may reduce your energy use by 1-3 percent.
- Start the heating season with a new furnace filter, and clean or replace it monthly to keep your furnace running efficiently.
- Setting your hot water heater to 120°F can cut your water heating costs by 10 percent.
- Open-hearth fireplaces draw heated air from your home, sending it and possibly your energy budget up the chimney. If you use your fireplace, install a snug-fitting set of glass doors and crack open a nearby window. Doing so reduces the amount of heated interior air drawn into the fireplace and improves efficiency by up to 20 percent.



Safety tips

- Before hanging holiday lights, check for damaged sockets, plugs and cords.
- Replace anything that looks defective.
- If you plan to string lights outdoors, be absolutely certain they are marked for outdoor use.
- If you use a ladder when decorating outside, stay well away from power lines. The same can be said for lights; do not place them near power lines.
- Fasten outdoor lighting securely to your home's exterior to protect the lights from wind damage. Use only insulated staples or plastic attachments to hold strings in place, not nails or tacks.
- To avoid overloading electrical circuits, never plug in more than three sets of lights to one extension cord.
- Don't use light-duty flat extension cords, often brown or white, to power your lights. Instead, use heavy-gauge UL or FM labeled round extension cords.
- Never run electrical cords under rugs or carpeting.
- Turn off electrical decorations before leaving home or going to bed.
- Don't let small children play with light strings.



Reduce Packaging Waste this Holiday Season

<https://www.treehugger.com/how-reduce-packaging-waste-holiday-season-4855204>



Giving and receiving gifts is one of the great pleasures of the holiday season, but that pleasure is somewhat reduced when you behold the pile of packaging waste that's left behind. [China closed its doors](#) to plastic waste imports in January 2018, but until then it had taken 70 percent of the United States' plastic waste and two-thirds of the UK's. Even though the U.S. had ample warning of the impending change, it failed to build additional recycling infrastructure, launch waste-reduction campaigns, or require manufacturers to come up with better packaging designs (a few things we could have done to cope with this problem). Knowing this, we have a clear responsibility to minimize this waste as best we can. Here are some tips to help reduce packaging waste over the holidays.

1. Make your own presents, using materials you already have.
2. Buy gifts loose without outer packaging, and refuse additional bags or boxes from stores.
3. Buy second-hand presents from thrift stores, local swap sites, or antique shops.
4. Leave surplus packaging at the store.
5. When shopping online, inquire about packaging prior to placing an order. Support companies whose shipping bags and boxes are plastic-free and fully recyclable.
6. Wrap gifts in newspaper, old wrapping paper or gift bags - cloth or brown paper. Try to keep wrapping paper and gift bags as nice as possible when you're opening a present and save for reuse. * *Note that most wrapping paper is non-recyclable.* *
7. Consider not wrapping presents at all, or just wrapping the kids' presents.
8. Use non-salvageable paper and cardboard as fire starter.
9. Talk to family and friends and ask if that gigantic pile of wrapping paper waste that dominates so many living rooms on Christmas morning can be eliminated or, at the very least, shrunk considerably.



For more ideas:

- <https://blog.marinedebris.noaa.gov/guide-greener-holiday-zero-waste-gifts-and-gift-wrapping>
- <https://www.treehugger.com/how-to-create-less-waste-during-the-holidays-4861186>
- <https://www.treehugger.com/eco-friendly-alternatives-wrapping-paper-4858648>

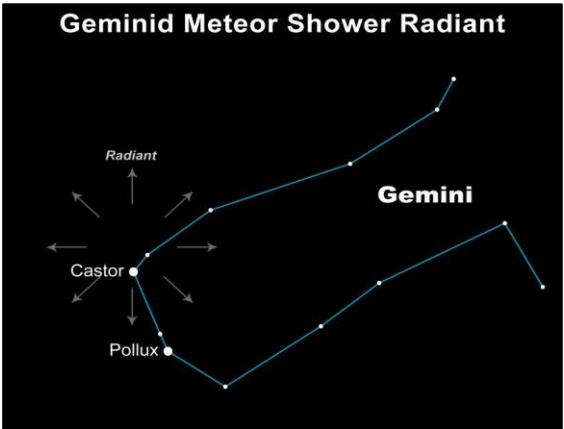


2022 Geminids Meteor Shower: All You Need to Know

Excerpts from <https://earthsky.org/astronomy-essentials/everything-you-need-to-know-geminid-meteor-shower/>

The Geminids meteor shower – always a favorite among the [annual meteor showers](#) – is expected to peak in 2022 on December 14. The Geminids are a reliable shower for those who watch around 2 a.m. local time from a dark-sky location. We also often hear from those who see Geminids meteors in the late evening hours. But this year, a [waxing gibbous](#) moon will be above the horizon during peak time for viewing. You can try watching in moonlight. Geminid meteors tend to be bold, white and quick. The brightest ones will overcome the light of the moon.

Astronomer Guy Ottewell agrees these meteors tend to be bright. He offered this insight on his blog: “The Geminids, deriving from an [asteroid rather than a comet](#), must include rock-sized pieces, which as they burn up in the atmosphere are often bright and do not leave trails.”

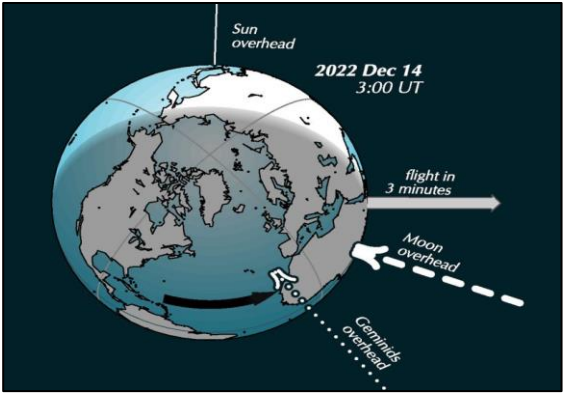


The meteors radiate from near the bright star Castor in the constellation Gemini, in the east on December evenings, highest around 2 a.m. local time (time on your clock for all parts of the globe). In 2022, a waning gibbous will wash out the meteors during the peak.

The Geminids meteor shower is best around 2 a.m. because its radiant point – the point in our sky from which the meteors seem to radiate – is highest in the sky at that time. As a general rule, the higher the constellation Gemini the Twins climbs into your sky, the more Geminid meteors you’re likely to see.

The Geminids’ radiant point nearly coincides with the bright star Castor in Gemini. That’s a chance alignment, of course, as Castor lies about 52 light-years away, while these meteors burn up in the upper atmosphere some 60 miles (100 km) above Earth’s surface.

Castor is noticeably near another bright star, the golden star Pollux of Gemini. It’s fun to spot them, but you don’t *need* to find a meteor shower’s radiant point to see these meteors. The meteors in annual showers appear in all parts of the sky. It’s even possible to have your back to the constellation Gemini and see a Geminid meteor fly by.



Predicted peak: [predicted*](#) for December 14, 2022, at 13 [UTC](#) (7p CST).

When to watch: The moon will illuminate the sky from late evening on, on the evening of December 13. The moon will rise slightly later on December 14. The Geminids tend to be bright. One option is to try watching in moonlight on the nights of December 13 and 14.

Overall duration of shower:
November 19 to December 24.

Radiant:
Rises in mid-evening, highest around 2 a.m.

Nearest moon phase:
In 2022, the [last quarter](#) moon falls on December 16. So it’s a bright [waning gibbous](#) moon that’ll illuminate the sky during the 2022 Geminid meteor peak.

Expected meteors at peak, under ideal conditions:
Under a [dark sky](#) with no moon, you might catch 120 Geminid meteors per hour.

An asteroid known as 3200 Phaethon is responsible for the Geminids meteor shower. This differs from most meteor showers which are caused by comets, not asteroids. **What’s the difference between a comet and an asteroid?**

A **comet** is defined as a dirty snowball, with a solid nucleus covered by a layer of ice which sublimates (turns from a solid to a gas) as the comet nears the sun. They revolve around the sun in elongated orbits, going close to the sun, then going far from the sun. Seen through a telescope, a comet will show a coma, or head of the comet, as a nebulous patch of light around the nucleus, when it gets close to the sun. An **asteroid** is a rock. Typically, an asteroid’s orbit is more circular than that of a comet. Through a telescope an asteroid appears star-like.



These definitions worked well until a few decades ago. Larger telescopes began discovering asteroids far from the sun, and some of these objects, as they approached the sun, grew comas and tails, requiring the change of designation from asteroid to comet. So, an object initially considered an asteroid can be reclassified as a comet. Can the opposite occur: a comet be reclassified as an asteroid? Yes, it can. It is possible that a comet can shut down when its volatile materials become trapped beneath the nucleus’ surface. This is known as a *dormant comet*. When the comet loses all of its volatile materials, it is known as an extinct comet. [The asteroid 3200 Phaethon](#) seems to be an example of either a dormant or an extinct comet.

3200 Phaethon was discovered on images taken by IRAS (Infrared Astronomical Satellite) on October 11, 1983. Initially named 1983 TB, it was given an asteroid name: 3200 Phaethon in 1985. It was found that the asteroid has the same orbit as the Geminids meteor shower. Never before had an asteroid been suggested as causing a meteor shower. It is still not known how material from the asteroid’s surface, or interior, is released into the meteoroid stream.

Arbor Day Free Seedlings for Fourth Graders

<https://dnr.wisconsin.gov/topic/treeplanting/arborform>



Arbor Day is a holiday during which individuals and groups are encouraged to plant trees. The holiday originated in Nebraska in 1872 but is now celebrated nationally and in many other countries. [Wisconsin’s Arbor Day](#) is celebrated on the last Friday in April and is usually linked with Earth Day.

In Wisconsin, the Wisconsin DNR helps celebrate Arbor Day with an environmental education program designed to teach students the importance of trees within our environment. Annually, we provide thousands of free tree seedlings to Wisconsin fourth-grade students for this celebration.

How to Order
Orders will be accepted until **March 15, 2023**. You can place an order online here: <https://dnr.wi.gov/forestryapps/arborday> or with a paper form: <https://dnr.wisconsin.gov/sites/default/files/to pic/TreePlanting/ArborDayMailer.pdf>. Fax completed paper forms to 715-421-7830 or mail them to the Griffith State Nursery, 473 Griffith Avenue, Wisconsin Rapids, WI 54494.

You will receive a confirmation email that your order was received and processed. If you haven’t received a confirmation email after ten days, email [Carey Skervén](#).

Ordering Instructions
Please order for current Wisconsin fourth-grade students only. Teachers should communicate with each other before ordering, but ultimately one fourth-grade teacher should order for all fourth-grade classes in their school. If you are ordering for more than one school, please complete a separate application for each.

If you are a parent of a fourth-grade student who is learning virtually but normally resides in a classroom, please work with your child’s teacher. The school must place the order for the class.



Northern Long-eared Bat Listed as an Endangered Species Due to White-nose Syndrome

Excerpts from <https://www.fws.gov/media/northern-long-eared-bat-final-rule-news-release>

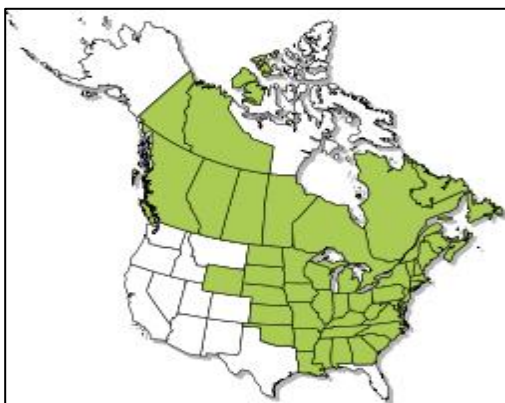


The U.S. Fish and Wildlife Service announced a final rule on November 29th to reclassify the northern long-eared bat as endangered under the Endangered Species Act (ESA). The bat, listed as threatened in 2015, now faces extinction due to the range-wide impacts of white-nose syndrome, a deadly disease affecting hibernating bats across North America. The rule takes effect on January 30, 2023.

The growing extinction crisis highlights the importance of the ESA and efforts to conserve species before declines become irreversible. "This listing is an alarm bell and a call to action," said U.S. Fish and Wildlife Service Director Martha Williams. "White-nose syndrome is decimating cave-dwelling bat species like the northern long-eared bat at unprecedented rates. The Service is deeply committed to working with partners on a balanced approach that reduces the impacts of disease and protects the survivors to recover northern long-eared bat populations."

Bats are critical to healthy, functioning natural areas and contribute at least \$3 billion annually to the U.S. agriculture economy through pest control and pollination.

The northern long-eared bat is found in 37 states in the eastern and north central United States, the District of Columbia, and all Canadian provinces from the Atlantic Coast west to the southern Northwest Territories and eastern British Columbia (below). These bats mostly spend the winter hibernating in caves and abandoned mines. During summer, northern long-eared bats roost alone or in small colonies underneath bark or in cavities or crevices of both live and dead trees. They emerge at dusk to fly primarily through the understory of forested areas, feeding on insects.



White-nose syndrome, the disease driving their decline, is caused by the growth of a fungus that sometimes looks like white fuzz on bats' muzzles and wings (see photo next column). The fungus thrives in cold, dark, damp places and infects bats during hibernation. Impacted bats wake up more frequently, which often results in dehydration and starvation before spring arrives. **Bats are the only species of wildlife known to be affected by white-nose syndrome, which has been confirmed in 38 states and eight Canadian provinces.**

White-nose syndrome has spread across nearly 80% of the species' entire range and is expected to affect 100% of the species' range by the end of the decade. The change in the species' status comes after an in-depth review found that the northern long-eared bat continues to decline and now meets the definition of an endangered species under the ESA. Data indicate white-nose syndrome has caused estimated declines of 97 to 100% in affected northern long-eared bat populations.



The change in status from endangered to threatened, when final, will nullify the prior 4(d) rule that tailored protections for the species when it was listed as threatened. The Service recognizes that the change to endangered status may prompt questions about establishing ESA compliance for forestry, wind energy, infrastructure and other projects in the range of the northern long-eared bat. The Service has a strong foundation in place for working with stakeholders to conserve listed bats while allowing economic activities within the range to continue to occur.

To address the growing threat of white-nose syndrome to the northern long-eared bat and other bats across North America, the Service is leading the [White-nose Syndrome National Response Team](#), a coordinated effort of more than 150 non-governmental organizations, institutions, Tribes, and state and federal agencies. Together we are conducting critical white-nose syndrome research and developing management strategies to minimize impacts of the disease and recover affected bat populations. To date, this effort has yielded scientific advancements that include identification of critical information about white-nose syndrome and its impacts on North American bat species. We developed and are using disease surveillance tools to monitor spread and impacts, and we're testing biological, chemical, immunological, genetic and mechanical treatments in a number of states to improve bat survival.



WHITE-NOSE SYNDROME

More information:

<https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis>

<https://www.npr.org/2022/11/29/1139665889/northern-long-eared-bat-endangered-white-nose>

<https://dnr.wi.gov/topic/EndangeredResources/Animals.asp?mode=detail&SpecCode=AMACC01150>

<https://www.batcon.org/bat/myotis-septentrionalis/>

Our Foxes – Adaptable Canids

<https://obdk.com>



Did you know that red foxes can survive in many different habitats? These omnivorous canids are very resourceful, and it has allowed them to thrive in a variety of places. Red foxes are found throughout the U.S., usually in forest, grassland, mountain, and desert habitats.



While these foxes may most commonly be seen with red fur, they can have silver or black fur in some instances. These foxes usually weigh 6-15 pounds and are about 22-32 inches long. Their tails add 14-16 inches onto that.

As they're omnivorous, red foxes will eat vegetables, birds, fish, fruit, and even pet food. Meanwhile they face threats from pumas, bears, coyotes, wolves, and humans. In the wild, red foxes tend to live to be around 4 years old. They are listed as of least concern by the IUCN (International Union for Conservation of Nature) - <https://www.iucn.org/>.

During the winter, red foxes will mate. Females have 1-12 pups when they give birth. They'll use dens to keep their offspring safe. Sometimes they'll make them themselves and other times they'll take over dens that have already been created by other animals. Red fur on their offspring takes about a month to show.

Gray foxes also live in Wisconsin, but they tend to prefer forested habitats. Gray fox are also sometimes known as the "tree fox" or the "cat fox". These fox are common, but very elusive and rare to spot in the wild. They are primarily nocturnal, but may forage during the day.



Gray fox are unique in the canid family, in that they are one of two species of canid that climb trees. They have rotating wrists and semi-retractable claws that help them climb up high to den, forage, or escape predators. This is a risky behavior for these fox, as they are not great at climbing down, and can easily injure themselves in the process. For more about our foxes in Wisconsin, visit <https://dnr.wisconsin.gov/topic/WildlifeHabitat/furbearers.html>.



Let's Talk Turkey: The History of a Wild Icon in America

<https://blog.nwf.org/2012/11/lets-talk-turkey-history-of-wild-icon-in-america/>



The turkey (*Meleagris gallopavo*) is one of wildlife conservation's greatest success stories. Unlike the accomplishment of cooking up a delicious stuffed turkey for Thanksgiving, this success story is about wild turkey. In the early 19th Century the wild turkey was reduced to a population of just 30,000. Today, the population numbers about 7 million in North America.

The domesticated turkey of today bears little resemblance to their wild ancestors. Turkeys are a native North American bird that was a food source for the Native Americans who introduced turkeys to the recently-arrived Pilgrims and Spanish Conquistadors in the 15th Century. The Aztec Indians of Mexico domesticated the Mexican subspecies of the wild turkey (called *guajolotes*) and the Spanish explorers took some of these back to Europe in the mid-16th Century where they became common farmyard animals.



Original distribution of the wild turkey in North America

These domestic turkeys eventually completed the circuit and came back to North American turkey farms from Europe. In fact the domesticated versions are so much larger and with so much more breast meat that they are unable to fly and have lost the instincts their wild cousins depend upon for their survival. The Mexican subspecies is now endangered in the wild but the other subspecies in North America are thriving.

Wild turkeys can fly and run at incredible speeds. They reach up to 55 mph flying and 25 mph running. They are also far more beautiful than the white domestic version that becomes the supermarket's butterball. The wild turkey's dark feathers are iridescent with shades of red, green and copper that shine when hit by the sun. The male bird (called a gobbler, or Tom) is the most colorful with a bright red head and neck wattle with a beautiful fan of tail feathers that it spreads out to impress the lady turkeys (called hens).

Turkeys are the largest member of the grouse family and they are the second largest wild bird in North America (after Trumpeter swans). Males weigh 11-24 lbs. and females 5-12 lbs. Like many sexually dimorphic species, males are selected for maximum sex appeal while females are more sensibly selected to be the right size to glean food from their environment and escape predators. Males can get away with being larger than females as they leave all the rearing of the chicks (poults) to the hens and are not a part of family flocks.



Although wild turkeys were once nearly extirpated, the four American subspecies have been restored to most of their former distribution, and to some areas where wild turkeys didn't originally occur. Turkey hunters were a major force behind the recovery of this bird through their support of the [National Wild Turkey Federation](#) and pressure on state wildlife departments. Wild turkeys are among the most difficult animals to hunt as they have extremely keen eyesight and are very smart. Hunters usually try to attract gobblers during the spring breeding season by imitating the calls of females or other males and it takes a lot of practice to be to fool a wary gobbler.

Benjamin Franklin praised the wild turkey and dissed our national bird, the bald eagle, as being "a Bird of bad moral charcter....[who] does not get his living honestly." Franklin contrasted the bald eagle with the turkey, "...a much more respectable Bird, and withal a true original Native of America....Though a little vain and silly, a Bird of Courage, and would not hesitate to attack a Grenadier of the British Guards who should presume to invade his Farm Yard with a red Coat on."

No doubt Franklin's perception of turkey's as "vain" reflects the male bird's strutting behavior during breeding season. Courtship displays like this, however, are common in many birds and other animals and serve a vital purpose in allowing females to choose the best available mate to father their offspring. (Franklin, himself, was known to dress up to impress the ladies and this is no different in intent or function from what many wildlife species, including turkeys, do.)



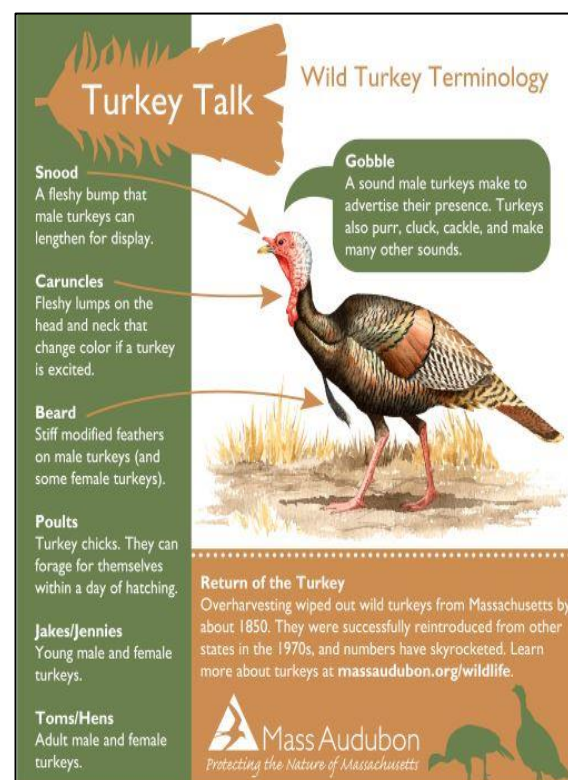
Today, the term "turkey" has come to mean different things including "a stupid, foolish, or inept person." However, this definition must refer to domestic turkeys and not the canny wild turkey.

From [allaboutbirds.org](#):

- The Wild Turkey and the Muscovy Duck are the only two domesticated birds native to the New World.
- In the early 1500s, European explorers brought home Wild Turkeys from Mexico, where native people had domesticated the

birds centuries earlier. Turkeys quickly became popular on European menus thanks to their large size and rich taste from their diet of wild nuts. Later, when English colonists settled on the Atlantic Coast, they brought domesticated turkeys with them.

- The English name of the bird may be a holdover from early shipping routes that passed through the country of Turkey on their way to delivering the birds to European markets.
- Male Wild Turkeys provide no parental care. Newly hatched chicks follow the female, who feeds them for a few days until they learn to find food on their own. As the chicks grow, they band into groups composed of several hens and their broods. Winter groups sometimes exceed 200 turkeys.
- When they need to, Turkeys can swim by tucking their wings in close, spreading their tails, and kicking.



For more about turkeys, visit:

- <https://www.audubon.org/field-guide/bird/wild-turkey>
- <https://www.smithsonianmag.com/science-nature/14-fun-facts-about-turkeys-665520/>
- <https://dnr.wisconsin.gov/topic/hunt/turkey>

